

IN THE CLAIMS:

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

1. (Currently Amended) An ~~information processing~~ encoding apparatus, comprising:
  - [[a)] a first encoding ~~means for encoding digital~~ unit adapted to encode inputted data;
  - [[b)] an interleaving ~~means for interleaving the digital~~ unit adapted to interleave the inputted data; and
  - [[c)] a second encoding ~~means for encoding~~ unit adapted to encode an output of said interleaving means,wherein ~~first and second error correction encoding algorithms are executed by sharing said first encoding means~~ said encoding apparatus executes a first encoding algorithm using said first encoding unit,  
wherein said encoding apparatus executes a second encoding algorithm using said first encoding unit, said interleaving unit and said second encoding unit, and  
wherein said encoding apparatus operates said first and said second encoding units in parallel in order to execute the first and second encoding algorithms in parallel.
- 2.-4. (Canceled)

5. (Currently Amended) An ~~information processing~~ encoding apparatus according to claim 1, wherein the first ~~error correction~~ encoding algorithm ~~performs a convolutional encoding of the digital data~~ is adapted to use convolutional coding, and the second encoding algorithm is adapted to use turbo coding.

6. (Currently Amended) An ~~information processing~~ encoding apparatus according to claim 1, wherein the second ~~error correction~~ encoding algorithm ~~performs a turbo encoding of the digital data~~ is adapted to use a turbo coding.

7. (Currently Amended) An ~~information processing~~ encoding apparatus according to claim 1, wherein the first ~~error correction~~ encoding algorithm ~~performs a non-recursive convolutional encoding of the digital data by using said first encoding means~~ is adapted to use non-recursive convolutional encoding, and the second ~~error correction~~ encoding algorithm performs a recursive convolutional encoding of the digital data by using said first encoding means is adapted to use recursive convolutional encoding.

8. (Currently Amended) An ~~information processing~~ encoding apparatus according to claim 1, wherein a constraint length of ~~the digital~~ encoded data encoded by the first ~~error correction~~ encoding algorithm is different from a constraint length of ~~the digital~~ encoded data encoded by the second ~~error correction~~ encoding algorithm.

9. (Currently Amended) An ~~information processing~~ encoding apparatus according to claim 1, further comprising[[:]]

selecting ~~means for selecting either~~ unit adapted to select the first or second error correction encoding algorithm in accordance with a type of the digital inputted data.

10. (Currently Amended) An information processing ~~encoding~~ apparatus according to claim 1, further comprising:

radio transmitting ~~means for transmitting the digital data encoded by at least one of the first and second error correction encoding algorithms~~ unit adapted to transmit encoded data encoded by the first or second encoding algorithm.

11.-20. (Canceled)

21. (Currently Amended) An information processing apparatus A ~~decoding apparatus~~, comprising:

[[a)] a first decoding ~~means for decoding encoded digital data~~ unit adapted to decode inputted data;

[[b)] a first interleaving ~~means for interleaving~~ unit adapted to interleave an output of said first decoding [[means]] unit;

[[c)] a second decoding ~~means for decoding~~ unit adapted to decode an output of said first interleaving [[means]] unit; and

[[d)] a second interleaving ~~means for interleaving~~ unit adapted to interleave an output of said second decoding ~~means;~~ unit.

wherein ~~first and second error correction decoding algorithms are executed by sharing said first decoding means~~ said decoding apparatus executes a first decoding algorithm using said first decoding unit,

wherein said decoding apparatus executes a second decoding algorithm using said first and second decoding units and said first and second interleaving units, and

wherein said decoding apparatus operates said first and second decoding units in parallel in order to execute the first and second decoding algorithms in parallel.

22.-24. (Canceled)

25. (Currently Amended) ~~An information processing~~ A decoding apparatus according to claim 21, wherein the first ~~error correction~~ decoding algorithm ~~performs a soft judgement decoding of the digital data~~ is adapted to use soft output decoding, and the second decoding algorithm is adapted to use turbo decoding.

26. (Currently Amended) ~~An information processing~~ A decoding apparatus according to claim 21, wherein the second ~~error correction~~ decoding algorithm ~~performs a turbo decoding of the digital data~~ is adapted to use turbo decoding.

27. (Currently Amended) ~~An information processing~~ A decoding apparatus according to claim 21, wherein said first decoding ~~[[means]]~~ unit normalizes a state metric value.

28. (Currently Amended) ~~An information processing~~ A decoding apparatus according to claim 21, wherein a constraint length of ~~the digital encoded~~ data which will be decoded by the first error correction decoding algorithm is different from a constraint length of ~~the digital encoded~~ data which will be decoded by the second ~~error correction~~ decoding algorithm.

29. (Currently Amended) ~~An information processing~~ A decoding apparatus according to claim 21, further comprising~~[[:]]~~ a selecting means for selecting ~~either unit adapted to select~~ the first or second ~~error correction~~ decoding algorithm in accordance with a type of ~~the digital inputted~~ data.

30. (Currently Amended) ~~An information processing~~ A decoding apparatus according to claim 21, further comprising: ~~radio transmitting means for transmitting the digital data decoded by at least one of the first and second error correction~~ a radio receiving unit adapted to receive encoded data which will be decoded by the first or second decoding algorithms.

31.-40. (Canceled)